

Foreign Bodies from the Upper Digestive Tract at University Hospital Center Gabriel Touré: The Contribution of Digestive Endoscopy

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Abstract

Foreign bodies ingestion is regularly observed in gastroenterology context. The evolution is favorable with early extraction. Our main objective was to evaluate foreign bodies managed in digestive endoscopic center of University hospital center Gabriel Touré. The study was retrospective from January 2007 to October 2017 in the endoscopic center of the service of gastroenterology of University hospital center Gabriel Touré and concerned the patients who have been addressed at this center for foreign bodies. We collated 44 patients who ingested foreign bodies among 2750 digestive endoscopies, that is to say, a frequency of 0.16%. In patient's history, we found caustic obstruction in 2.3% of patients. The foreign body ingestion was accidental in 97.7% of cases. Pieces of money were more frequent (54.4%). In 86.4%, the foreign bodies were into the esophagus. Upper digestive endoscopy performed foreign bodies extraction in 88.6 of cases. In 9.1%, the elimination was spontaneous on 72 hours. Surgeon was indicated in 2.3% of patients. The evolution was favorable in 97.7% of patients. One patient died by digestive bleeding. Conclusion: Foreign bodies ingestion is frequent in children. The upper digestive endoscopy can do the diagnosis and the management.

Keywords

Foreign Bodies, Upper Digestive Tractus, Endoscopy

1. Introduction

Ingestion of foreign bodies is a clinical situation that gastroenterologists face on a regular basis. But the evolution is most often favorable in early extraction.

Populations at risk are children, the elderly, adults with a psychiatric disorder or an underlying esophageal disease [1] [2]. Almost 80% to 90% of ingested foreign bodies spontaneously cross the digestive tract, and only 10% to 20% require endoscopic extraction. Less than 1% of cases resorting to surgery are useful [3]. Unlike adults, ingestion of foreign bodies children is most often accidental and occurs in half of cases before the age of five [3]. Data from poison control centers in the United States suggests more than 107,000 cases of foreign bodies ingestion in 2000 [4]. In Tunisia in 77 patients collected in 22 years, the number of foreign bodies ingested was 102 [5]. In another study, the extraction of foreign bodies represented 8.3% of the interventional digestive endoscopic activity in children [6]. In Benin, 32 cases of foreign bodies ingestion were collected between 2011 and 2013 in an hepato-gastroenterology department [7]. In Mali, from 2011 to 2014 in the thoracic surgery department, 36 cases of foreign bodies enclosed in the esophagus were treated [8]. In the ORL department of the CHU Gabriel Touré, Doumbia *et al.* collected 26 cases from 2007 to 2009 [9]. These foreign bodies are also sent to the digestive endoscopy center of the Gabriel Touré CHU, despite the absence of any study on the subject in this center. We thus initiated this work with the aim of inventorying foreign bodies supported in the digestive endoscopy center of the Gabriel Touré University hospital center in Bamako.

2. Patients and Methods

Our study was retrospective and took place from January 2007 to October 2017 in the endoscopy unit of the hepato-gastroenterology department of the CHU Gabriel Touré.

It focused on patients referred to the department for upper gastrointestinal endoscopy. We included in this study patients who ingested foreign bodies and referred to the gastrointestinal endoscopy unit for extraction. Incomplete or unusable files have been excluded. For the development of this work we used departmental registers, patient records and digestive endoscopy reports.

The parameters studied were:

- sociodemographic data (age, sex, profession),
- the history, the circumstances of ingestion, the nature of the EC ingested, the consultation time, the clinical manifestations,
- endoscopic and radiological findings,
- the therapeutic modalities (endoscopic, surgical or medical supervision extraction) and evolution.

The equipment used for the extraction of foreign bodies consisted of claw forceps, basket forceps, and the diathermic loop.

Data entry and analysis were carried out on the software SPSS 12.0 for Windows. We made a simple entry of the texts, tables and graphs on World and Excel software.

3. Results

At the end of our study, we collected 44 patients who ingested foreign bodies

from January 2007 to August 2017 out of 2750 digestive endoscopies, either a frequency of 0.16%. Children under 11 years of age represented 77.3% (n = 34) and adults 22.7% (n = 10). The mean age of our patients was 13.68 ± 18.3 with ranges of 2 and 65 years (**Table 1**). The sex ratio was 2.7. A history (ATCD) of caustic stenosis was found in 2.3% of patients. The mode of onset was accidental in 97.7% of cases. Coins were the most common foreign bodies found with a frequency of 54.4% (**Table 2**). In 52.4% of our patients, the time between ingestion and consultation was less than 8 h. However, 28.5% of patients had a delay of more than a day and 4.8% a delay of more than a month (**Table 3**). Thoracic and abdominal radiographic examination revealed foreign bodies in 85.3% and 14.7%, respectively. In 86.4% of cases the foreign bodies were located in the esophagus (**Table 4**). The clinical manifestations found in patients on admission were dominated by dysphagia alone in 56.8% of cases, dysphagia associated with hypersialorrhea in 22.7% of cases. Other clinical signs such as cough (4.6%), odynophagia (2.3%) and vomiting (2.3%) were also found. However, 13.6% of our patients had no clinical manifestation. All patients underwent upper gastrointestinal endoscopy using a flexible endoscope which allowed foreign body extraction in 88.6% (n = 39). Spontaneous elimination in stool was obtained after 72 hours in 9.1% (n = 4). In 2.3%, surgery was used in an elderly subject who had ingested their dental prosthesis after several failed endoscopic extraction attempts (**Table 5**). The outcome was favorable in 97.7% (n = 43) of the patients

Table 1. Sociodemographic data.

Sociodemographic data	Numbers (n = 44)	%
Sex		
Male	32	72.7
Female	12	27.3
Age in years		
1 - 10	33	75
11 - 20	1	2.3
21 - 30	0	0
31 - 40	4	9.1
41 - 50	3	6.8
51 - 60	1	2.3
61 - 70	2	4.5

Table 2. Distribution of patients according to the nature of the foreign body.

Nature of foreign body	Numbers	Percentage
Coin (5-10-25 and 50 F)	24	54.4
Flat tack of toy	3	6.8
Nuts liana goïne	3	6.8

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Dental prosthesis	3	6.8
Fish bone	3	6.8
Earring	1	2.3
Drink bottle closure	1	2.3
Piece of meat	1	2.3
Piece of bone	1	2.3
Razor blade	1	2.3
Nail point	1	2.3
Body "packing" 6 bowls	1	2.3
Toothpick	1	2.3
Total	44	100

Table 3. Distribution of patients according to the time between ingestion of the foreign body and consultation.

Time limit	Numbers	Percentage
<8 Hour	22	52.4
8 - 24 Hour	6	14.3
1 - 6 days	9	21.4
7 - 14 days	2	4.8
15 - 30 days	1	2.3
>30 days	2	4.8
Total	42	100

Table 4. Distribution of patients according to the site of the foreign body.

Siège du corps étranger	Numbers	Percentage
Esophagus	38	86.4
Stomach	3	6.8
Intestine	2	4.5
Duodenum	1	2.3
Total	44	100

Table 5. Distribution of patients according to treatment.

Treatment	Numbers	Pourcentage
Endoscopic extraction	39	88.6
Surgical extraction	1	2.3
Medical surveillance	4	9.1
Total	44	100

after foreign body extraction with disappearance of clinical signs and these patients did not require special monitoring. However, we deplore the death of a 4-year-old child from a cataclysmic digestive hemorrhage which occurred one week after the extraction of a flat pile of toys that had remained in the esophagus for 4 days.

4. Discussion

During the study period, we registered 44 patients including 34 children (77.3%) and 10 adults (22.7%). In the study by Togo *et al.* [8], children represented 83.3% and adults 16.7%. The male sex was the most affected with a sex ratio of 2.66. Doumbia *et al.* [9] found a female predominance in a study in adults. However, the difference between these studies could be explained by a selection bias. Our result is comparable to that of Togo and al [8] who found a sex ratio of 1.7. In 52.4% of patients the time between ingestion and consultation was less than 8 h. Togo *et al.* [8] found an average delay of 12h. In the work of Kallel Souha *et al.* [10], and in that of Vignon [7], 75% of patients consulted within the first 24 hours following ingestion. According to the nature of the foreign body, coins were the most found with 54.4%. This predominance of coins has been reported by other studies [5] [8] [9]. A antecedent of caustic stenosis was found in 2.3% of patients. Kallel Souha *et al.* [10], found 0.4% of caustic stenosis, 0.3% of peptic stenosis and 0.2% of anastomotic stenosis. X-ray examination revealed foreign bodies in the thorax in 85.3% and in the abdomen in 14.7%. During the study by Doumbia *et al.* [9] and that by Togo *et al.* [8], this imaging demonstrated foreign bodies in 31% and 80.6% respectively. The esophagus was the site of foreign bodies in 84.6% of our patients, the stomach in 6.8% and the duodenum in 2.3%. In the work of Kallel Souha *et al.* [10], the esophagus was involved in 94.4% and the hypopharynx in 5.6% of patients. The most frequent clinical manifestations were dysphagia (81.8%) followed by hypersialorrhea (27.3%). Mahfouza *et al.* [11], found 72% hypersialorrhea, 71% dysphagia and 24% vomiting. Doumbia *et al.* [9] found dysphagia associated with odynophagia as the predominant symptom (38%). These different symptoms found in these different studies are generally linked to the obstructive nature of foreign bodies. Endoscopic extraction was the most widely used therapeutic method in our study (88.6%). In 2.3% of cases, surgery was used. Our results are comparable to those of Togo *et al.* [8] who performed endoscopic extraction in 88.9% of cases and surgery in 2.8% of cases. The outcome was favorable in 97.7 of the patients. However, we noted one death in a digestive bleeding picture. Togo *et al.* [8] reported no deaths, but 5.6% of patients had oral lesions related to attempted extraction before consultation and esophageal perforation. Kallel Souha *et al.* [10] recorded one case of death in a picture of septic shock. Doumbia *et al.* [9] reported two cases of perforation of the esophagus and one death in a picture of broncho pneumopathy secondary to an esotracheal fistula. It should be noted that unlike our study, these authors used a rigid endoscope.

5. Conclusion

The ingestion of foreign bodies is mainly the preserve of children. An early diagnosis and an adapted therapeutic method of extraction must be implemented to avoid complications which can be life-threatening.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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